

REMARKS

Reconsideration of this application is requested. Entry of the present amendment is requested because it is believed that the same places the application in condition for allowance or in better form for appeal.

The Examiner had no art rejection of Claims 9, 11, 20-22, 24, 30 and 36. Therefore, these dependent Claims have been rewritten as respective Claims 39 through 48 (Claim 36 having depended on either of Claim 1 or Claim 12 has been rewritten as two claims, namely 47 and 48, one incorporating the subject matter of Claim 1 and the other incorporating the subject matter of Claim 12 before the present amendment. It is believed that these claims are allowable even if the Examiner feels that other amendments herein raise new issues (and it is respectively contended that no new issues are raised).

Claims 1, 27 and 30 (and the new rewritten independent claims) have been amended to obviate the Section 112 rejection made by the Examiner. It is believed that these claims now are in proper form.

Additionally, Claims 1, 12 and 27 have been amended to further define over the cited art. In particular, Claim 1 has been amended to define the frame as being configured to rigidly vault posteriorly and to provide that the interengaging features on the frame allow limited anterior optic movement relevant to the frame. No similar or like structure nor configuration is disclosed or hinted at in the cited art.

Independent Claim 12 has been further limited with regard to the relationship between the optic and frame to “allow anterior movement of the optic relative to the frame” as disclosed in the present application. Claim 27 is amended to define a pair of rigid spaced-apart posteriorly vaulted frame members such as disclosed in Figures 20 – 26, and no similar nor like lenses defined in this claim is in the cited art.

Claim 38 has been deleted because the subject matter thereof has been incorporated into its independent Claim 27. A new Claim 49, dependent on amended Claim 27, has been added. New Claims 50 and 51 also have been added.

The changes made to Claims 1, 12 and 27 define specific features not found in any of the cited art. Even so, each of this prior art, and further distinctions, are discussed below. The Hagege lens involves semi-rigid haptics and a uniplanar lens. The haptics and optics are assembled in the eye. It is a circular optic with loops on a circular haptic ring. On the other hand, the lens of the present application preferably is rigid and posteriorly vaulted, implanted as one piece, the haptics generally have parallel sides, and the optic is flexible (e.g., silicon) allowing the lens to be folded longitudinally for insertion through a small incision.

With regard to Gorban, the disclosure is of two diametrically opposed semi-rigid curved loops as haptics, attached to a peripheral loop immediately around the edge of the haptic. In contrast, the haptics of the present application are posteriorly vaulted and preferably have parallel sides. The optic preferably is flexible as noted above to allow the lens to be folded longitudinally for insertion through a small incision.

Guilbert discloses circular or looped haptics, no posterior vaulting, and involves four longitudinal plate portions attached to opposite sides of the optic. Again with regard to the present application, preferably the lens has rigid posterior vaulted haptics with preferably parallel sides, and the optic is between the haptics. Rochels is a loop lens, and the loops are attached to a circular frame to which is attached within its center and interchangeable optics. The lens and optics are made with PMMA, the optic is not flexible and there is no rigid haptic posteriorly vaulted frame. The optic of the present application is not intended to be interchangeable within the eye.

Turning to Hayworth, the same discloses a rigid lens with a rigid optic, and the design is in three planes with an annulus centered on the center of the optic. The lens of the present application preferably is foldable as noted above, a two plane open design.

The significant differences in the lens structures of the present application and claims are more positively defined in present amended Claims 1, 12 and 27. Again, in Claim 1 the frame is defined as being configured to rigidly vault posteriorly in the eye of a person, and importantly the interengaging features enable limited anterior optic movement relative to the frame which is nowhere disclosed, suggested or hinted at in the cited art. It is noted in the present application that the optic 32, for example, is movable anteriorly of the eye under vitreous pressure upon constriction of the ciliary muscle. The contraction of the muscle produces vitreous pressure which tends to urge the optic toward or into the hole 14 of the frame. No similar structure nor operation is disclosed nor made obvious in the cited art. Claim 12 has similar language with regard to allowing anterior

movement of the optic relative to the frame, again which is not disclosed nor made obvious by the cited art.

Claim 27 specifically defines a pair of rigid spaced-apart posteriorly vaulted frame members such as disclosed in Figures 20-26 and the structure of the lens including the optic and the web, such as web 82 of Figure 20, secured to and extending between the frame members (such as 84 and 85 of Figure 20) and having thereon the optic. Furthermore, Claims 50 and 51 define a lens assembly different from the cited art. No like or similar structure is shown or made obvious by the cited art.

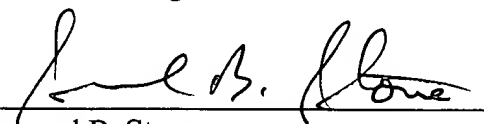
In view of the foregoing, it is respectfully submitted that the claims remaining in this application define patentable subject matter over the cited art, along with Claims 39 through 48 which it is believed that the Examiner acknowledges are allowable, and favorable reconsideration and a Notice of Allowance is earnestly solicited.

The Commissioner is authorized to charge Counsel's Deposit Account No. 150665 for any additional fees that may be required and to credit any overpayments to said Deposit Account 150665.

Dated: 6-27-03

4 Park Plaza
Irvine, California 92614-2558
(949) 567-6700

Respectfully submitted,
Orrick, Herrington & Sutcliffe LLP

By: 
Samuel B. Stone
Reg. No. 19,297
Attorneys for Applicant

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) An intraocular lens assembly for increased depth of focus, comprising:
a frame having haptics extending oppositely and longitudinally, said haptics having lateral edges disposed on an [the] outer periphery of the frame, said frame being configured to rigidly vault posteriorly in an eye of a person,
said frame having end portions to engage in the periphery of the capsular bag of an eye,
said frame defining an [a generally circular] opening disposed through said frame, said opening positioned between inner portions of said haptics,
an optic sized and configured to engage in an edge portion of said frame opening, and
interengaging features on the frame and on the optic for attachment of the optic to the frame for limited anterior optic movement relative to the frame,
whereby light refracted by the cornea of the eye travels in an increased distance to the optic to substantially increase depth of focus.

12. An intraocular lens assembly for increased depth of focus, comprising:
a frame of generally rigid material and configured to vault posteriorly in an eye of a person, said frame having haptics extending oppositely and longitudinally, said haptics having lateral edges disposed on the outer periphery of the frame,
said frame defining a central [generally circular] opening disposed through said frame,
said frame having transverse slots spaced oppositely from said frame opening, and

an optic adapted to be disposed adjacent said frame opening, said optic having mounting portions extending oppositely therefrom for engagement in said frame slots to retain the optic relative to the frame but allow anterior movement of the optic relative to the frame,

whereby light refracted by the cornea of the eye travels in an increased distance to the optic to substantially increase depth of focus.

27. An intraocular lens assembly for increased depth of focus, comprising:

a pair of [relatively] rigid spaced-apart posteriorly vaulted frame members adapted for engagement with the periphery of a capsular bag of the eye, said pair of frame members disposed oppositely and longitudinally about an [said] optic, said frame members having end portions extending oppositely and transversely to engage in the peripheral portion of the capsular bag, said frame members having lateral edges disposed on the outer periphery of the frame members, and

a web secured to and extending between said frame members and having thereon said [an] optic.